



Choosing the Correct Airbrush

by Ver Curtiss

another tips & techniques installment...

Perhaps you've just read the millionth article in which the author describes painting the latest and greatest model with an airbrush, making you feel as if you'll never be able to correctly paint your models without one of these technological marvels. Perhaps you're seriously considering buying an airbrush, but feel overwhelmed by the variety of models available. After all, the purchase of an airbrush can involve a rather hefty investment, especially if you intend to acquire a compressor to go with it. It's easily possible to spend hundreds of dollars on airbrush equipment, and end up with tools which simply will not work for your purposes. On the other hand, it's possible to acquire a tool with which you'll be delighted, and which will serve you faithfully for years. So how can you avoid wasting your valuable money on the wrong equipment?

Just under two years ago, I faced this very same dilemma. Like many first-time airbrush buyers, I had absolutely no idea where to begin in the purchase of an airbrush. After spending a couple of months reading articles, looking at Web sites, and talking to customer service representatives, I made my decision and purchased my first airbrush. What I learned along the way is represented in this article. I'm hoping it will help you make an informed decision before pouring out your hard-earned dollars on this exciting new tool.

Decisions, Decisions

The first step to a wise airbrush purchase is deciding what you plan to do with the brush. Since you're reading *Modeler's Resource*®, I'd bet you're interested in painting models with the airbrush. This means that you're going to need something that handles small details quite well. Certain types of airbrushes are made just for detail work, and are capable of handling remarkably fine tasks, e.g., turbine airbrushes. Yet you probably don't want to limit yourself exclusively to a fine detail airbrush. What if you want to spray the larger areas of a model, or spray a clear coat over its entire surface? You'll need something that handles both fine detail and larger areas. While virtually no airbrush will handle every sort of job, some are suitable for use on a remarkable variety of projects. For example, some are able to deliver sprays ranging from hairline to over a one inch stream. It's important to choose the correct brush for your expected tasks, since they're manufactured for a variety of purposes. Besides models, airbrushes are used for painting everything from automobiles, to T-shirts, to ladies' fingernails, and even for decorating cakes.

The second step is to decide which types of paints and inks you'll be wanting to spray through your new airbrush. Some brushes can be used for inks, artists' stains, watercolors,

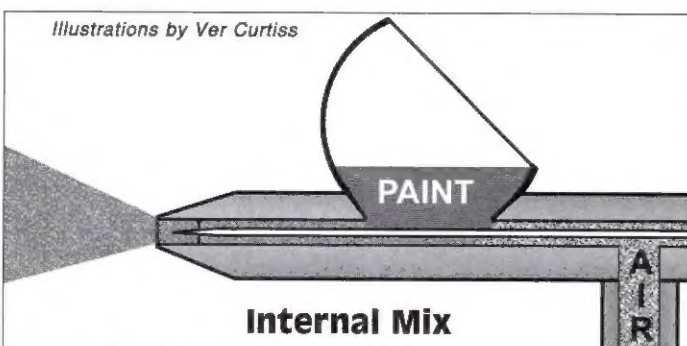
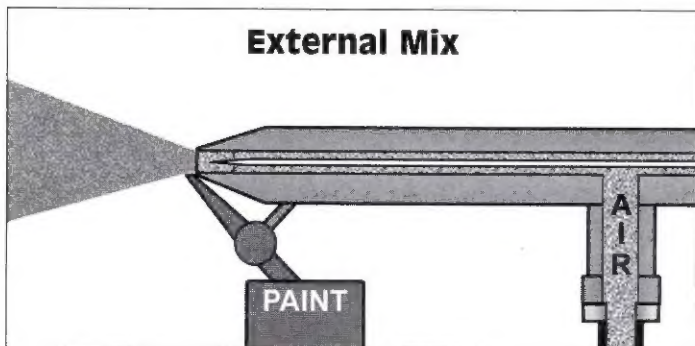
and acrylics, but will clog when used with heavier liquids like enamels and lacquers. Others can easily spray the heavier paints, but require too much air pressure to be of any use for lighter inks and paints. As a modeler, you may want an airbrush which can handle lighter substances like artists' stains and acrylics as well as enamels. If you're starting to get the idea that modelers need a widely versatile airbrush, you're starting on the right track.

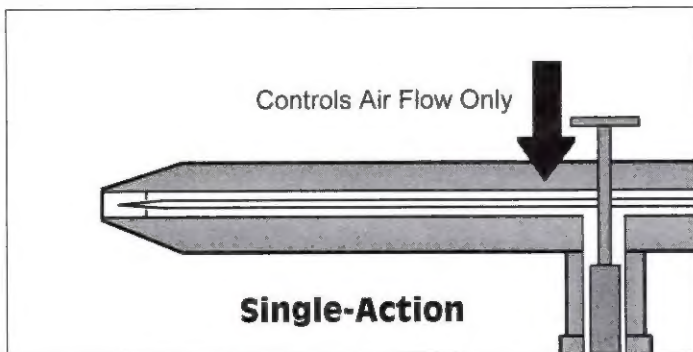
Airbrushes in Action

An airbrush essentially mixes compressed air and paint (or other liquids) into a spray. The thickness and amount of the spray is determined through the size and position of the nozzle and needle, as well as the amount of air and paint delivered by the airbrush. Knowing this, you can now concentrate on two primary concerns: where the paint and air are mixed, and how they're mixed.

Firstly, there can only be two places where the mixing occurs: inside the airbrush and outside the airbrush (OK, I know that seems obvious, but please bear with me.). External mix airbrushes perform the mix outside the brush, specifically at the front of the airbrush, by drawing the paint up in front of the brush. Because this arrangement means that the paint and other media never enter the body of the brush, it can be quite useful for substances which would clog other airbrushes. Consequently, these brushes are primarily used for lacquers, varnishes, and ceramic glazes. Because of the limited uses of these airbrushes, they comprise only a small share of the airbrushes carried by many airbrush dealers. Internal mix airbrushes do the mixing inside the brush, which makes the brushes more suitable for a variety of media, and can give superior control of the spray. Because of the paints used and the control needed, an internal mix brush is essential for modelers.

Secondly, we're concerned with how the paint and air are mixed. With a single-action airbrush, the airflow is controlled by depressing the trigger. The amount of paint sprayed is controlled by adjusting the nozzle or needle assembly between uses, requiring you to stop painting to adjust the flow. This type can be useful if you require a consistent spray pattern when painting large surfaces, but could be less than useful for most modelers since it severely limits your control. Alternatively, dual-action airbrushes allow for superior control of both the paint and air delivery with the trigger. Airflow is controlled as the trigger is depressed, while the flow of paint is controlled as the trigger is pulled back. This configuration allows for superior control of both paint and airflow, since each is independent-





ly adjusted. Some brushes can be used with optional extra needle or nozzle types, which further expand the spray flow control. Both beginners and experts alike can benefit from the double-action arrangement. For modelers, a double-action airbrush is almost certainly the best choice.

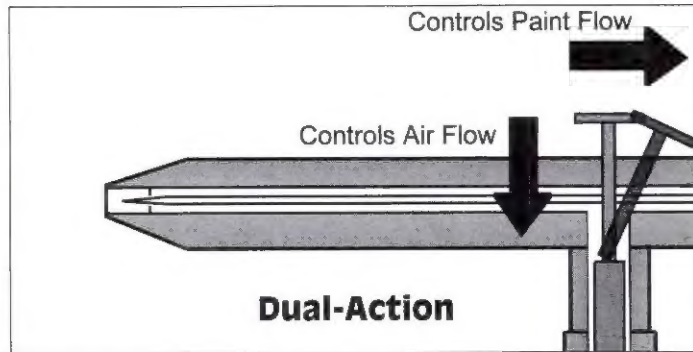
How to Feed an Airbrush

The final consideration in choosing an airbrush is how you plan to feed the paint into the brush. Suction-feed (a.k.a. siphon-feed) brushes are fed from a jar of paint on the bottom of the airbrush, and rely on air pressure to pull the paint out of the jar and into the airstream. The flow of pressurized air past the feed tube essentially creates a low pressure zone or vacuum into which the paint is drawn. The greatest advantage to this design is that it allows for rapid cleaning of the brush between paint colors. Just a few quick squirts of airbrush cleaner, and you're ready for the next color. The disadvantage is that this type of brush requires considerable amounts of air pressure to work correctly, making fine details difficult to achieve. Because of this, suction-feed brushes are typically inappropriate for modelers.

Gravity-feed brushes are better suited to a modeler's needs. These brushes are fed by a paint cup on either the top of the brush (top feed) or on the side of the brush (side-feed). Gravity pulls the paint into the brush, allowing for much lower air pressures to be used. For anyone planning to do any kind of detail work with an airbrush, this configuration is absolutely necessary. The disadvantage to a gravity-feed airbrush is that it's more difficult to clean than a suction-feed brush, requiring several paint cups of cleaner fluid to be flushed through the brush to be properly cleaned. When choosing a gravity-feed brush, make certain that you choose one with a cup large enough to hold the paint you'll require for all your tasks. The cups on some brushes can only handle a few drops of paint (a 1cc capacity), while others hold much more (up to 1/3 oz. capacity). It's probably best to choose one that's a little too large than one that's too small, or you may get frustrated with having to frequently add paint to the cup.

Additional Information

Even with all the information you now have, it's still a good idea to do a little of your own research before purchasing an airbrush. Specifically, you'll want to compare individual models of brushes for their particular uses, capabilities and limitations. Each brush will be suitable for certain purposes, and you



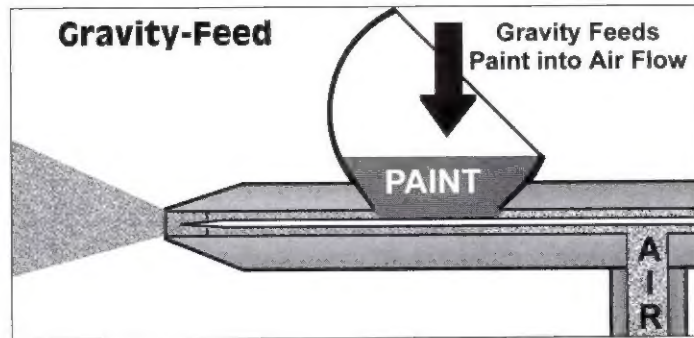
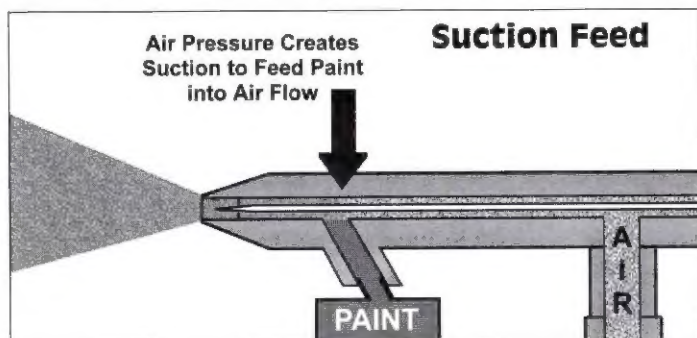
should be aware of just what they are before buying. Perhaps the best source of information on the suitable uses for individual airbrush models is the "Bear Air" catalog (1-800-BEAR-AIR or www.bearair.com). The catalog features a fantastic chart which shows a side-by-side comparison of various airbrushes, their suitable uses, and the types of paints they can spray. The chart is truly invaluable for anyone thinking of purchasing an airbrush.

Of course, that shouldn't be the only catalog you look at before buying your airbrush. There are a lot of companies that specialize in airbrushes. Besides Bear Air, I've been quite impressed with the selection and prices in the catalogs from Dixie Art (1-800-783-2612 or dixieart.com), and Pacific Airbrush (1-800-423-0250 or www.pacificairbrush.com). In deciding which model of airbrush you want to purchase, it's a great idea to comparison shop. Look at airbrushes at your local hobby and art supply stores, surf the Internet and do some catalog shopping. Many catalog companies feature special deals such as guaranteed lowest pricing, free postage, or free airbrush paint starter kits with airbrush purchases.

One other option you might consider is buying a used airbrush through an Internet auction site (e.g., www.ebay.com). Some great deals can be found through Internet auctions. However, you need to remember that while used airbrushes can certainly be less expensive, they are considerably riskier. Unlike brushes purchased from reputable companies, used brushes come with no guarantee that they will work. Despite the fact that parts are easily available to fix nearly any brush currently on the market, a used airbrush is probably not a good idea for the first-time buyer. So if you're tempted by the low prices, just carefully consider the possible benefits and hazards.

Conclusion

I hope this article has been both helpful and informative for you. And just in case you're wondering ... How did my first airbrush purchase turn out? I ordered a new Iwata HP-C (an internal-mix, dual-action, gravity-feed airbrush) from one of the companies above, and I absolutely love it! I've used it to paint scratchbuilt models and fine art illustration alike. It's been a great first airbrush and a true delight to learn with, and I'm confident I'll be using it for years to come. I sincerely hope you'll be as happy with your new airbrush!



The Basics of Airbrushing!

by Ver Curtiss

another tips & techniques installment...

Like most readers of *Modeler's Resource*, I've had a lifelong love for modeling. I've also had a lifelong love of art and even a small degree of success as an artist. I enjoy a variety of techniques and media, ranging from pencil and ink, to traditional brushed acrylics and watercolors, sculpture, photography, and even a variety of computer techniques. (Check out www.art-nocturne.com to see what I'm talking about.) Yet, I've never enjoyed any tool or medium as much as the airbrush. It's truly a wondrous tool.

Basic airbrushing actually dates back to the era of cave painting. The first airbrushes were hollow reeds, and the artist would fill his mouth with dyes made from fruit or berries, blowing them through the reed in a spray. The first masking techniques utilized leaves and the artist's own hand with the dyes sprayed around them, leaving behind the outline of the leaf or hand. In this 21st Century A.D., airbrushing is a little more advanced, with a variety of techniques employed. The airbrush in its present incarnation is a wonderfully complex melding of technology and art. Maybe that's one of the reasons I love the airbrush; it seems like every time I use it, I discover some new capability of the airbrush.

Basic Airbrush Techniques:

• Masking:

As mentioned, masking is probably the oldest airbrush technique, and still endures to this day. Masking is not only the most basic airbrush technique, but also perhaps the most important. Masking is simply the act of putting something in the way of the paint spray so that the surface underneath is left unpainted (**See Illustration 1**). Whatever is placed in the way of the paint becomes the mask.

• The Earliest Airbrushing

When masking, you have a choice of two types of masking techniques to choose from. The first of these is the tight mask. For this method, the mask is cut to fit the job, then placed directly against the surface to be painted (**see illustration 2**). If correctly performed, this type of

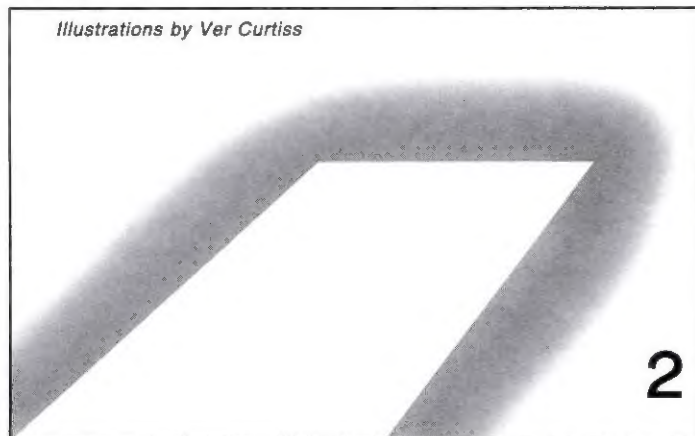
mask will produce very crisp and clean edges around the mask. If the mask is not properly affixed to the paintable surface, the mask can lift or the paint can "bleed" under the mask from the pressure of the spray and the project can be ruined. Depending on the type of mask used, it can sometimes be useful to burnish down the edge of the mask with a fingernail to keep it from lifting. Tight masks are typically made from paper, tape, mylar, frisket film (an adhesive plastic film made especially for airbrushing) (**see illustration 3**), or special masking liquids. When using masks, which are not self-adhesive (e.g., paper, mylar, etc.), it can be useful to keep a can of spray adhesive handy. Available in most hobby and craft shops, these sprays can be helpful in keeping the mask against the surface. One warning though...the fumes from these adhesives can be toxic, so spray the mask outdoors.

• Tight Masking

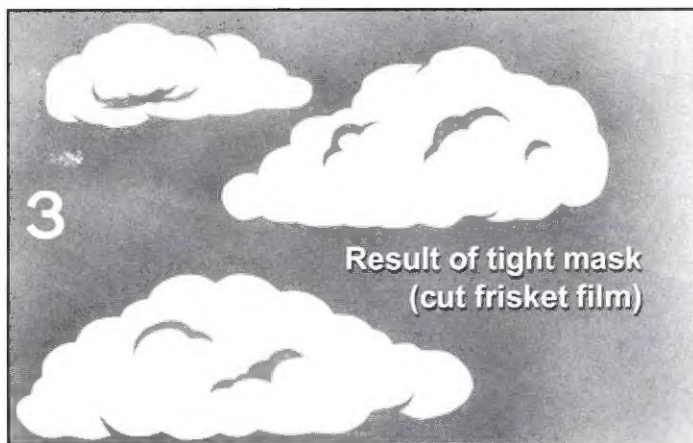
As a modeler, you may find the most useful tight mask to be liquid masks. Masking liquids are thick liquids, which dry into a paintable rubbery solid. Because they are liquids, they cling wonderfully to irregularly shaped projects (like most models), and when dried, they can be easily peeled off. Several companies make excellent masking liquids, and they are typically available in hobby and craft stores (in craft stores, look for them in the artists' watercolor and acrylics sections). The masking liquids can tend to be a bit expensive. Because of this, some modelers prefer to use rubber cement or artists' acrylic matte gel medium to save a few dollars. You'll need to experiment to find out what works best for you. Regardless of the masking material used, you should be careful when removing any mask. It's quite easy to remove one or two layers of paint, along with the mask. Always test your mask on a scrap or an inconspicuous piece of the project.

• Tight Masking on Paper

The second type of mask is the loose mask. This masking method is usually used when you want to achieve soft edges around the mask. To do this, the mask is lifted slightly as the surface beneath is painted (**see illustrations**



Illustrations by Ver Curtiss



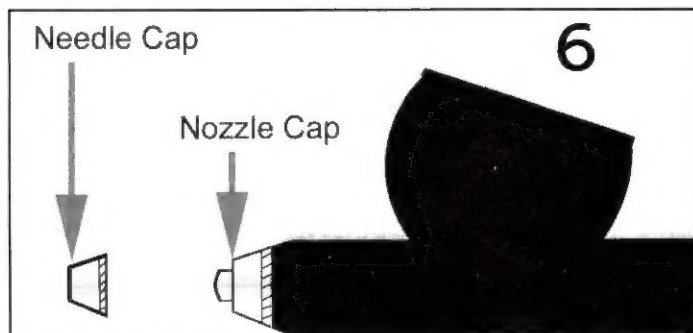
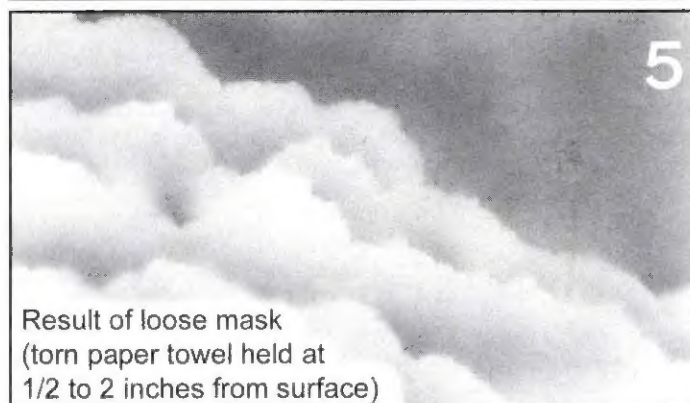
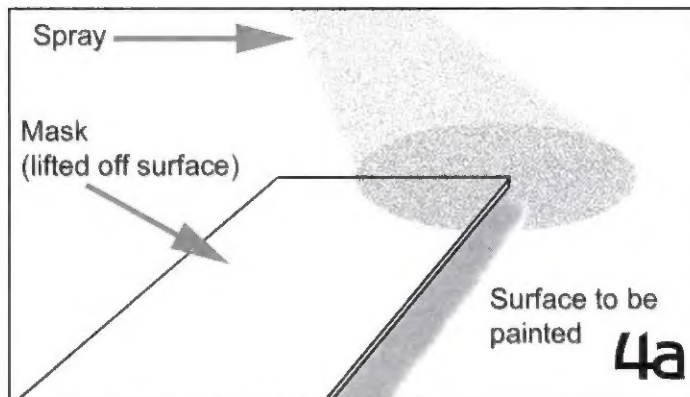
4a, 4b & 5). Materials such as paper, mylar, and cardboard are typically used in loose masking. With this type of masking, there is no need to be concerned about removing paint when removing the mask. The only drawback to this technique is that finer airbrush control is required, and therefore the more skilled the airbrusher, the better the results.

• Stippling:

Another basic airbrushing technique is stippling. Stippling is essentially a method of using a coarse spray to achieve a pattern of dots. For the modeler, stippling can be a useful technique when painting things such as rocks, beards on male figures, and a variety of shading purposes. Stipple patterns can be achieved a few different ways. The easiest way is to simply turn the air pressure down to about one third to one quarter the pressure you'd usually use, and slowly increase the amount of paint delivered until you achieve the effect you desire. This method of stippling can require precise control on a dual-action airbrush and may not produce a coarse enough pattern for some applications. To achieve other patterns, you can experiment with removing the needle cap and/or nozzle cap from your airbrush (see illustration 6), and experiment with the pressure and paint amounts. Be very careful when doing this; it's quite easy to severely damage your airbrush's needle when removing or replacing the caps. It's also prone to damage if you get it too close to the surface being painted.

• Removable Airbrush Caps

As you can see from the example below, there can be quite a difference produced by reducing pressure, removing the needle cap and removing the nozzle cap of my Iwata HP-C airbrush. A) shows the normal airbrush spray at 20 psi, with both caps still on the brush. B) is a stipple spray produced by lowering the air pressure to about 7 psi and tilting the airbrush trigger all the way back to maximize paint flow. C) shows the same technique, but with the needle cap removed. D) is the stipple pattern resulting when both caps are removed at 7 psi, and the trigger is rocked

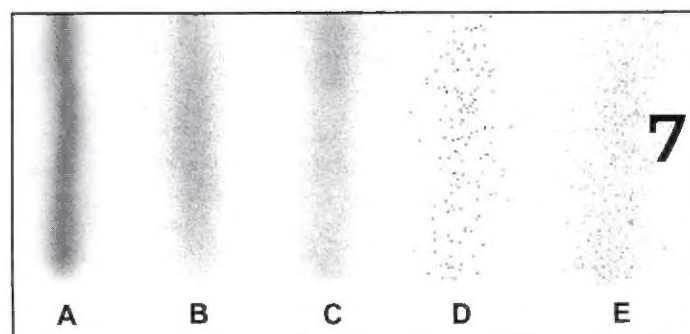


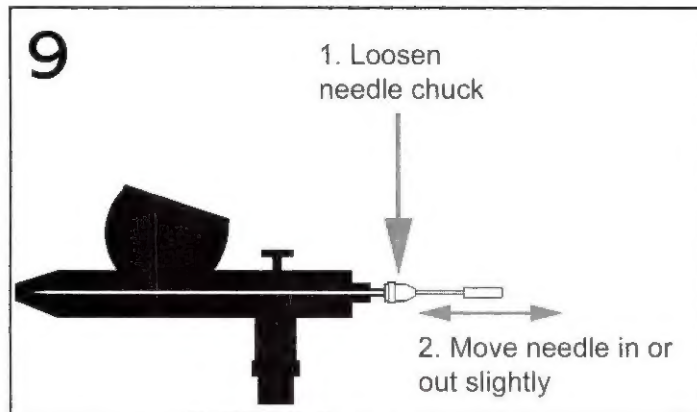
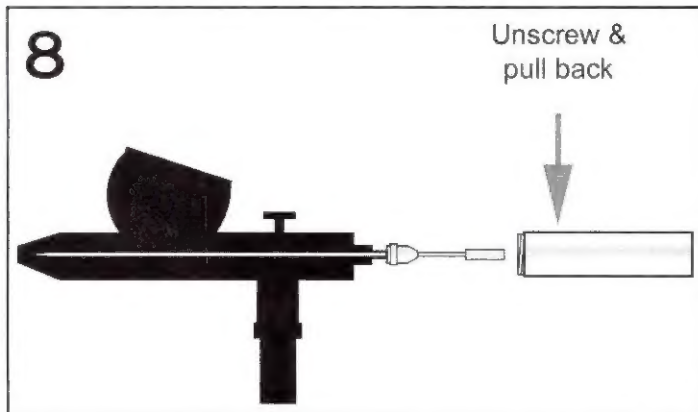
back and forth. E) also shows both caps removed and the trigger rocked back and forth, but at 20 psi.

Troubleshooting Tips:

• Thinning:

This may seem like a no-brainer to some, but failing to properly thin your paint can lead to any number of problems with your airbrush. Quite simply, some people will try to treat their airbrush more like a spray can than a precision





tool. Some paints will simply be too thick for it, so you'll need to thin down the paint. Depending upon the type of paint you're using, you may need to use either water (e.g., for acrylics) or thinner, specially formulated for the specific paint (e.g., for many enamels). To find the right mix, simply experiment a little until you achieve the correct effect. If the paint isn't sufficiently thinned, the brush will spatter the paint and will clog. If the paint is thinned too much, the paint won't sufficiently cover the surface and can at times just make a watery mess (which can actually be helpful when weathering models, but a headache at any other time).

Additionally, you may want to try straining your paint, especially if it's sat for a while since the last usage. Simply pour the paint through a very fine strainer to filter out any clumps or small particles. Some super-fine filters are made especially for this purpose, and would be ideal (if you can find them). You may also check with medical supply companies. They sell paper cones with super-fine filters, made specifically for filtering out kidney stone particles. If you can't find any super-fine strainers, try straining the paint through several layers of cheesecloth.

- **Teflon Tape:**

Worn and leaking seals can also lead to airbrushing problems. They can allow moisture collection in the hoses and lost air pressure, among other things. A little teflon tape can help this as well as prevent leaks. Teflon tape is an extremely thin and pliable tape available in hardware stores and used to seal off plumbing leaks. Simply cut off a piece, and stretch it around the threads of air hoses and other connectors, then tightly screw the connections together.

- **The Needle:**

Sometimes your brush will spatter paint or clog, no matter how much you thin your paint or clean the brush. At other times, it may seem that regardless of little you pull the trigger back, you get ten times more spray than you want. Both of these problems can be caused by the same thing...the needle. A bent or damaged needle can be responsible for a lot of different problems, but so can an improperly seated needle. If the needle sits too tightly in the airbrush, the brush will spatter paint and clog. If it fits too loosely, the brush will allow too much spray, regardless of how little you try to spray. To remedy either of these problems, try repositioning the needle a little either forward or backward. You probably only need to move it a millimeter or two, so don't overdo it. Simply unscrew and carefully pull off the back end of your airbrush (see illustration 8). This exposes the needle and the needle chuck. Loosen the

needle chuck, and very carefully slide the needle in and out a little at a time (see illustration 9). When you find the right spot, remember it; you'll probably want to use that same needle position every time you put the brush back together after cleaning.

- **Cleaning up Mistakes:**

Airbrushes can offer a number of advantages over traditional paintbrushes, but perhaps the most useful of these is the ease with which mistakes can be remedied. Because the paint is applied so thinly, it can be very easy to cover over or even erase any mistakes. The easiest way to get rid of a mistake is to simply cover it up with a fresh layer of paint. Just be sure to blend the new layer over the old so there aren't any noticeable ridges or lines of demarcation. Another way to remove airbrushing mistakes is to literally erase them. Depending on the project and the placement of the mistake, you could just remove the offensive layer of paint. You could simply sand off the mistake with a fine grit sandpaper, and on some paints, a soft white eraser may even work.

The thinly layered paint can also be helpful in other respects. It can be carefully rubbed or scraped off, revealing previously applied layers of paint. This technique can be utilized for effects very much like drybrushing.

Thin paint layers can also lead to problems with paint rubbing off when you least want it to. If you're satisfied with a layer of paint and want to protect it, you might want to use a clear coat between layers. I don't recommend using acrylic clear coats though. In my experience, they seem to exacerbate problems with paint rubbing off. I've had a lot better luck with canned enamel clear coat sprays. Just remember that these can go on rather thickly, so don't overuse them.

- **Conclusion:**

Many of the techniques and tips discussed above will probably take a little practice and experimenting before you feel completely comfortable with them. But that's half the fun of airbrushing. So feel free to experiment and invent your own variations on these basic themes!



ARTCAST, INC.
18 years molding and casting experience.

Tel: 817.854.0595
Artcast, Inc. • 206 E Bryon Nelson Blvd, Roanoke TX 76262
www.gtesupersite.com/artcast • E-mail: artcast@gte.net